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SCIENCE

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CONTENTS

<i>The American Association for the Advancement of Science:—</i>	
<i>Proceedings of the Cleveland Meeting: PROFESSOR H. E. SUMMERS</i>	41
<i>The American Society of Naturalists:—</i>	
<i>Heredity and Responsibility: PROFESSOR EDWIN G. CONKLIN</i>	46
<i>Scientific Notes and News</i>	55
<i>University and Educational News</i>	57
<i>Discussion and Correspondence:—</i>	
<i>The Vote on the Priority Rule: DR. W. H. DALL. The Staining of Protozoa: SAMUEL T. DARLING. Dorsal Scale Rows of Snakes: PROFESSOR ALEXANDER G. RUTHVEN. The Question of Text-books in Composition: PROFESSOR A. T. ROBINSON</i>	58
<i>Scientific Books:—</i>	
<i>Partington on Higher Mathematics for Chemical Students: PROFESSOR EDWIN BIDWELL WILSON. Hertwig's Allgemeine</i>	

<i>Biologie: F. R. L. Czapek's Chemical Phenomena in Life: PROFESSOR RAYMOND J. POOL</i>	63
<i>Standardization of the Accounts of Learned Societies: PROFESSOR ALBERT BUSHNELL HART</i>	66
<i>Special Articles:—</i>	
<i>Evidence that Sodium belongs to a Radioactive Series of the Elements: PROFESSOR F. C. BROWN</i>	72
<i>The American Association for the Advancement of Science:—</i>	
<i>Section A—Mathematics and Astronomy: PROFESSOR G. A. MILLER</i>	76
<i>Societies and Academies:—</i>	
<i>The Anthropological Society of Washington: W. H. BABCOCK. The Helminthological Society of Washington: MAURICE C. HALL</i>	77

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THE CLEVELAND MEETING OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

THE sixty-fourth meeting of the American Association for the Advancement of Science was held at Cleveland, Ohio, from December 30, 1912, to January 4, 1913, under the presidency of Dr. Edward Charles Pickering, director of the Astronomical Observatory of Harvard College, Cambridge, Mass.

The excellent arrangements made for the meetings, the good hotel and other public utilities of Cleveland, and unusually mild and pleasant weather through most of the week, combined to make the material environment one of the most agreeable experienced by the association. The number of members registered was 720, and in addition 150 from the affiliated societies; but as is well known this registration is always incomplete, especially in the case of members of affiliated societies who are not members of the American Association for the Advancement of Science. It is safe to say that the total in attendance must have exceeded 1,000.

The following societies, most of them affiliated with the American Association for the Advancement of Science, met in Cleveland at the same time:

Astronomical and Astrophysical Society of America,
 American Mathematical Society,
 American Physical Society,
 American Society of Zoologists, Eastern and Central Branches,
 American Association of Economic Entomologists,
 Entomological Society of America,
 American Nature Study Society,
 School Garden Association of America,
 American Microscopical Society,
 Botanical Society of America,
 American Phytopathological Society,
 Botanists of the Central States,
 Society for Horticultural Science,
 American Association of Official Horticultural Inspectors,
 Association of Official Seed Analysts,
 American Psychological Association,
 American Society of Biological Chemists,
 American Society for Pharmacology and Experimental Therapeutics,
 American Association of Anatomists,
 American Physiological Society,
 American Federation of Teachers of the Mathematical and Natural Sciences,
 Society of the Sigma Xi,
 American Society of Naturalists.

The opening general session held on the evening of Monday, December 30, in the ball room of the Hotel Statler was called to order by the retiring president, Dr. Chas. E. Bessey, who introduced the president-elect, Dr. Edward C. Pickering. Addresses of welcome were given by Mr. Newton D. Baker, mayor of Cleveland, Dr. Chas. F. Thwing, president of the Western Reserve University, and Dr. F. M. Comstock, acting president of the Case School of Applied Science. Responses were made by President Pickering. The address of Mayor Baker was especially noteworthy as embodying ideals for the future of Cleveland which aroused the heartiest appreciation in the minds of all his hearers. Perhaps the strongest assurance that Cleveland will ultimately reach the eminent position predicted by him is the fact that it already

has the foresight to elect such men to its highest offices. The annual address was then delivered by the retiring president of the association, Dr. Charles Edward Bessey on "Some of the Next Steps in Botanical Science." It is printed in the issue of SCIENCE for January 3. The general session then adjourned and was followed by a reception to the members of the association and affiliated societies.

The annual addresses by retiring vice-presidents were made as follows:

Monday Afternoon

Vice-president Shimek, before the Section of Geology and Geography. Title: "Significance of the Pleistocene Mollusks."

Tuesday Afternoon

Vice-president Frost, before the Section of Mathematics and Astronomy. Title: "The Spectroscopic Determination of Stellar Velocities, Considered Practically."

Vice-president Nachtrieb, before the Section of Zoology. Title: "Section F—Is It Worth While?"

Vice-president Newcombe, before the Section of Botany. Title: "The Scope of State Natural History Surveys."

Vice-president Millikan, before the Section of Physics. Title: "Unitary Theories in Physics."

Wednesday Afternoon

Vice-president Porter, before the Section of Physiology and Experimental Medicine. Title: "On the Function of Individual Cells in Nerve Centers."

Vice-president Thorndike, before the Section of Education. Title: "Educational Diagnosis."

Vice-president Ladd, before the Section of Anthropology and Psychology. Title: "The Study of Man."

Thursday Afternoon

Vice-president Norton, before the Section of Social and Economic Science. Title: "Comparative Measurements of the Changing Cost of Living."

Other addresses worthy of especial note were the following:

On Tuesday evening, Dr. W. J. Humphreys, of the U. S. Weather Bureau, gave an illustrated lecture, complimentary to the members of the American Association for the Advancement of Science and the affiliated societies and to the residents of Cleveland and vicinity, on the subject of "Across the United States with the European Geographers."

On Monday afternoon, President Benjamin M. Davis, of the American Nature Study Society, gave an address entitled "A Summary of the Study of Agricultural Instruction in Rural Schools."

President A. B. Macallum, of the American Society of Biological Chemists, gave an address on Monday on "The Energy of Muscular Contraction; Thermodynamic or Chemodynamic."

Dr. Edward Lee Thorndike gave his address on Tuesday, as president of the American Psychological Association, on the subject of "Ideo-motor Action."

President W. T. Macoun, of the Society for Horticultural Science, also gave his address on Tuesday on the subject "The Relation of Climate to Horticulture."

On Wednesday evening, Dr. Philip P. Calvert, of the Entomological Society of America, gave a public address on the subject "An Entomologist in Costa Rica."

On Wednesday, President W. D. Hunter, of the Society of Economic Entomologists, gave an address on the subject "Insects and Human Diseases."

On Wednesday afternoon, President John A. Lomax, of the Folk-Lore Society, gave an address on "Stories of an African Prince."

On Wednesday evening, Professor W. D. Farlow gave the address of the retiring president on "A Comparison of the Present Conditions in Botany with those in the Early Seventies."

On Thursday evening, Dr. T. J. Headlee gave his annual address, as president of the American Association of Official Horticultural Inspectors, on the subject of "The Federal Plant Quarantine Law."

On Thursday evening, Professor Edwin G. Conklin gave the annual address as president of the American Society of Naturalists on "Heredity and Responsibility."

A number of symposiums and sessions devoted to matters of public interest were held by various sections and affiliated societies. Among these may be mentioned a symposium under the auspices of the American Society of Biological Chemists on "Some Recent Applications of Physical Chemistry in Biology."

A symposium under the auspices of the Botanical Society of America on "Permeability and Osmotic Pressure."

A symposium by the Phytopathological Society on "International Phytopathological Problems."

A symposium in charge of the American Society of Naturalists on "Adaptation."

The section on social and economic science held a symposium on some economic problems of current interest.

A general interest program on sound and sound waves was held under the auspices of Section B.

A general interest program devoted largely to broad educational problems, including a discussion of the National University was held under the auspices of Section L.

The council met daily. Among the chief matters of business transacted were the following:

Seventy-five new members were elected.

Two hundred and fifty-five members were elected fellows.

A report from the committee on policy was adopted, providing for the appointment of a committee of five to consider the future of Section C.

The amendment to the constitution, proposed last year, and providing for the establishment of "Section M. Agriculture," was adopted.

Amendments to the constitution were also proposed as follows, in order that they may be acted upon next year under the provisions of the constitution.

Article 22—Amend by omitting "*Mechanical and*" after the title "*D*," so as to read; "*D—Engineering*."

Article 22—After "Section M. Agriculture" add "*The council shall have power to create additional sections from time to time, and to discontinue, combine, or rearrange existing sections.*"

The financial report of the permanent secretary was read, accepted and ordered printed.

The council adopted the following resolutions, relating to the proposed meeting at San Francisco in 1915.

Resolved: that a committee be appointed for the proposed San Francisco meeting of the association in 1915, this committee to be known as "The Committee on the Pacific Coast Meeting."

The president later appointed on this committee the following:

Wm. Wallace Campbell, Sc.D., LL.D., director of the Lick Observatory, Mt. Hamilton, Cal., *chairman*; John Casper Branner, Ph.D., LL.D., professor of geology, Leland Stanford University; Wm. Alanson Bryan, president Pacific Scientific Institution, Honolulu; Henry Smith Carhart, Sc.D., LL.D., Pasadena, Cal.; Charles Lincoln Edwards, Ph.D., University of Southern California, Los Angeles, Cal.; Professor Wm. Trufont Foster, president of Reed College, Portland, Ore.; Geo. Ellery Hale, Sc.D., LL.D., director of the Mt. Wilson Observatory, Pasadena, Cal.; Mellen Woodman Haskell, Ph.D., professor of mathe-

matics, University of California; Eugene Walde-mar Hilgard, Ph.D., emeritus director of the College of Agriculture, University of California; Geo. Holmes Howison, LL.D., professor of philosophy, University of California; Oliver Peebles Jenkins, professor of physiology, Stanford University; David Starr Jordan, M.D., Ph.D., LL.D., president of Stanford University; Thos. Franklin Kane, Ph.D., president of the University of Washington; Lyman Vernon Kellogg, professor of entomology, Stanford University; Chas. Atwood Kofoid, Ph.D., professor of zoology, University of California; Alfred L. Kroeber, Ph.D., Affiliated Colleges, San Francisco, Cal.; Andrew Cowper Lawson, professor of geology and mineralogy, University of California; E. Percival Lewis, Ph.D., professor of physics, University of California; Jas. Harvey McBride, M.D., Pasadena, Cal.; Daniel Trembly McDougal, Ph.D., LL.D., Desert Botanical Laboratory, Tucson, Ariz.; Lillien J. Martin, professor of psychology, Stanford University; John Campbell Merriam, Ph.D., professor of paleontology, University of California; Agnes Claypool Moody, Ph.D., Berkeley, Cal.; John Muir, LL.D., Martinez, Cal.; Wm. Emerson Ritter, Ph.D., director of the Marine Biological Station, San Diego, Cal.; Harris Joseph Ryan, professor of electrical engineering, Stanford University; Fernando Sanford, professor of physics, Stanford University; William Albert Setchell, Ph.D., professor of botany, University of California; John M. Stillman, Ph.D., professor of chemistry, Stanford University; Benjamin Ide Wheeler, president of the University of California.

The committee on policy presented the following, which was adopted:

Resolved: that it be recommended that the council authorizes the committee on the Pacific Coast meeting proposed for 1915, to hold in the name of the association meetings of its members resident in that region, for the purpose of considering the relations of the association to the exposition in question, and if desirable, for the presentation of scientific programs. The expenses incurred shall be met from funds in the hands of the permanent secretary to such extent as may be approved by the committee on policy.

The following grant was allowed:

To the Concilium Bibliographicum . \$200

A report of progress in the study of fish scales was received from Prof. Theo. D. A.

Cockerell to whom a grant of \$75.00 had been made.

A report was received from Mr. Charles Peabody, delegate of the association to the XIV. Congress International d'Anthropologie et Archeologie Prehistorique, which was held in Geneva, September 9-14, 1912.

The council passed the following resolution on "Expert Testimony," presented jointly by Dr. M. G. Lloyd and Dr. J. A. Holmes:

Resolved: that a special committee of five be appointed by the president to collect and study data covering the practise in different countries relative to the employment of expert testimony in court procedure, and to cooperate in joint committee with representatives of other national organizations in studying this question with a view to submitting recommendation for new state and national legislation concerning the same;

That the permanent secretary of the association extend to other national organizations interested in this subject an invitation from this association to appoint a member on said joint committee, and to cooperate further with this association in taking such action relative to this matter as will best promote public interest;

That this social committee of five shall report both its findings and the findings of the joint committee, and also such action as may be taken by other organizations to the council of the American Association for the Advancement of Science at its meeting in January, 1914.

The council adopted the following, introduced by Professor H. B. Ward:

Resolved: That the council refer to the committee on policy the question of granting to secretaries of sections, the general secretary, and the secretary of the council, a mileage allowance in addition to the hotel allowance now made, and that the council empower the committee to take such action as may seem wise after investigation of the subject.

The following resolution, introduced by Dr. J. A. Holmes, was adopted by the council:

Resolved: that a special committee of five be appointed by the president to consider and report

to the committee on policy a plan for the more rapid increase in the membership of the association.

That the committee on policy is hereby authorized to employ an associate secretary at a salary not to exceed \$3,000 per annum, whose traveling expenses shall also be paid out of the treasury not to exceed \$800 per annum and whose special duty it shall be to carry forward this extension work.

The committee on policy is hereby authorized to adopt, if necessary, such method as it may deem best for collecting additional funds for meeting such expenditure as may be needed.

The president later appointed on this committee the following: Messrs. J. A. Holmes, Chas. Baskerville, Hugh M. Smith, H. B. Ward, H. W. Springsteen.

The council adopted the following resolutions, introduced by Dr. J. McK. Cattell:

Resolved: that the council of the American Association for the Advancement of Science requests the educational institutions, government bureaus and other agencies engaged in scientific research to send one or more delegates to the annual convocation week meetings of the association and its affiliated societies, and that when possible the traveling expenses of the delegates be paid by the institutions which they represent.

Resolved: that a committee of three be appointed by the chair to draw up a list of institutions to which this resolution, together with a suitable letter, shall be sent by the permanent secretary.

The following were elected as members of the council to serve for three years: Messrs. J. McK. Cattell, J. M. Coulter and N. L. Britton.

At a meeting of the general committee held Thursday evening, January 2, invitations for future meetings were received from Atlanta, Philadelphia, Nashville, St. Louis, San Francisco, Leland Stanford, University of California, Portland, Seattle, Niagara Falls, Cincinnati, Columbus and Denver.

It was resolved to hold the next meeting in Atlanta, Georgia. It was further resolved to recommend to the next general committee that the meeting for 1914 be

held at Philadelphia, and that a summer meeting be held at San Francisco in 1915.

The following officers were elected for the coming year:

President: E. B. Wilson, Columbia University, New York.

Vice-Presidents:

Section A—Frank Schlesinger, Allegheny Observatory.

Section B—A. D. Cole, Ohio State University.

Section C—A. A. Noyes, Massachusetts Institute of Technology.

Section D—O. P. Hood, U. S. Bureau of Mines, Washington, D. C.

Section E—J. S. Diller, U. S. Geological Survey.

Section F—A. G. Mayer, Carnegie Institution of Washington.

Section G—H. C. Cowles, University of Chicago.

Section H—W. B. Pillsbury, University of Michigan.

Section L—P. P. Claxton, U. S. Commissioner of Education.

General Secretary: H. W. Springsteen, Western Reserve University.

Secretary of the Council: W. A. Worsham, Jr., University of Georgia.

Secretaries of Sections:

Section A—F. R. Moulton, University of Chicago.

Section D—A. H. Blanchard, Columbia University.

Section F—H. V. Neale, Knox College.

Section G—W. J. V. Osterhout, Harvard University.

Section H—George G. MacCurdy, Yale University.

Section L—S. A. Curtis, Detroit, Michigan.

Place of next meeting: Atlanta, Georgia.

Date of next meeting: Convocation Week, 1913-14.

At the general session, held Friday morning at Western Reserve University, the following resolutions were adopted:

Resolved: that the American Association for the Advancement of Science extend to the authorities of Western Reserve University and to those of the Case School of Applied Science, to the Board of Education and the Director of Public Schools, to the Mayor of Cleveland, to the local committee in charge of the arrangements for the third Cleveland

meeting of the association, now about to close, and especially to the ladies' reception committee and to the authorities of the different industrial plants which have been opened to the inspection of members, the hearty thanks of the association for the admirable arrangements made, the excellent facilities offered, and the delightful courtesy and hospitality which have been extended by all and which have been highly instrumental in making this third Cleveland meeting one of the most successful which the association has held in recent years.

H. E. SUMMERS,
General Secretary

HEREDITY AND RESPONSIBILITY¹

ONE of the greatest and most far-reaching themes which has ever occupied the minds of men is the problem of development. Whether it be the development of a chicken from an egg, of a race or species from a preexisting one, or of the body, mind and institutions of man, this problem is everywhere much the same in fundamental principles, and knowledge gained in one of these fields must be of value in each of the others. Familiarity with development does not remove the real mystery which lies back of it, though it may make plain many of the processes concerned. The development of a human being, of a personality, from a germ cell seems to me the climax of all wonders, greater even than that involved in the evolution of a species or the making of a world.

We are all familiar with the historic attempts which have been made to solve this problem. The old doctrine of evolution, or preformation, solved it by practically denying development; the doctrine of epigenesis recognized development but did not explain it. The one found all organs and parts present in the germ, which needed merely to grow and unfold to bring them

¹Presidential address before the American Society of Naturalists, Cleveland, O., January 2, 1913.